INFORMATION SYSTEMS

A VENDOR POINT OF VIEW

INPUT

NOTES:

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- Overview -

Status of the Industry

INPUT

NOTES:

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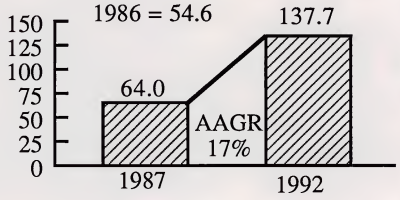
Information Services Market
($ Billions)



INPUT

NOTES:

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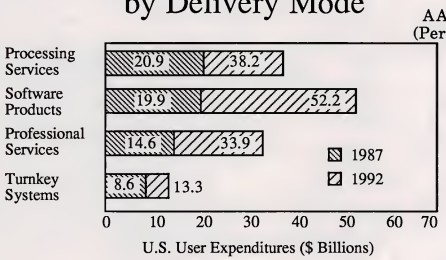
Information Services Industry by Delivery Mode



INPUT

NOTES:

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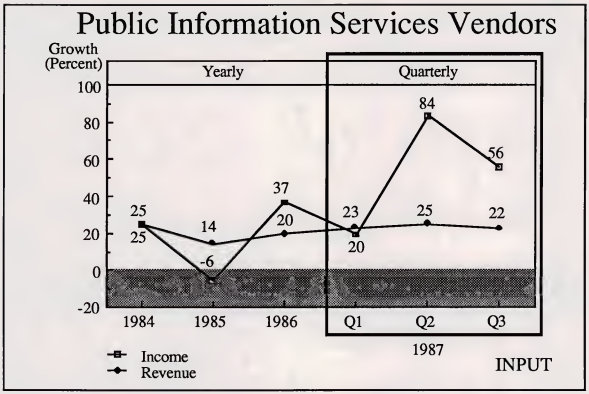

NOTES:

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Key Events

- Processing Services
  - FCC Local Access Charge
- Software Products
  - Distribution: Telemarketing
  - IBM Actions
    - SAA
    - ASD

INPUT

NOTES:

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Key Events

- Professional Services
  – Systems Integration
- Turnkey Systems
  – Direct Sales by Manufacturer
- Market
  – Mergers/Acquisitions/Alliances

INPUT

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ENVIRONMENT

INPUT

NOTES:

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Effects of Lower Stock Prices

- Capital Formation
- Initial Public Offerings (IPOs) Postponed
- Secondary Placements-Lower Valuations
- Mergers and Acquisitions Delayed
  AND
- Possible Regulatory Changes

INPUT

NOTES:

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IS Manager Comments on Economic Change
(25 Interviews)

Service Industry Participant
(Constantly Monitoring Economic Indicators)

"Saw Early Signs of Recession in Late 1988, Early 1989 and Planning for It" ... "Just Watching to See if Stock Market Acts as Catalyst"

INPUT

NOTES:

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IS Manager Comments on Economic Change
(25 Interviews)

Process Manufacturing Participant

"Recession Is Already Built into the Plan"
Re: Inflation "Don't See It Coming"

INPUT

NOTES:

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IS Manager Comments on Economic Change
(25 Interviews)

Process Manufacturing Participant

"My Business Line Is Pharmaceuticals Which Are Terribly Immune to Recession", "Regulatory Considerations Are Main Budgetary Impact"

INPUT

NOTES:

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IBM Revenue Growth

SOURCE	(Percent)			
	1983	1984	1985	1986
Sales	38.4	27.8	15.6	(0.4)
Services	19.4	25.1	20.1	28.0
Rentals	(17.0)	(28.7)	(37.4)	(25.5)
Total Revenue	16.9	14.3	9.0	2.4

Net of Currency Gains: (6.3)

INPUT

NOTES:

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IBM Standards - Controlling The Environment

- WINDOWS: Common Menus, Icons
- SQL: User Query
- SNA: Intercompany Communication

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NOTES:

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IBM Standards - Controlling The Environment

- Token Ring LAN: Intra-Company Communications
- OSI: Network Design Normalization

INPUT

NOTES:

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IBM Standards - Controlling The Environment

- SAA: Application Design and User Interfaces: Bringing It All Together

INPUT

NOTES:

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IBM Status in Information Services Industry

- Processing Services
  - Information Network/SIS (EDI)
- Software Products
  - System Application Architecture
  - Applications System Division

INPUT

NOTES:

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IBM Status in Information Services Industry

- Professional Services
  - Systems Integration
  - Segment Focus
- Turnkey Systems
  - Serious Evaluation!

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INFORMATION SERVICES INDUSTRY 1987-1992

INPUT

NOTES:

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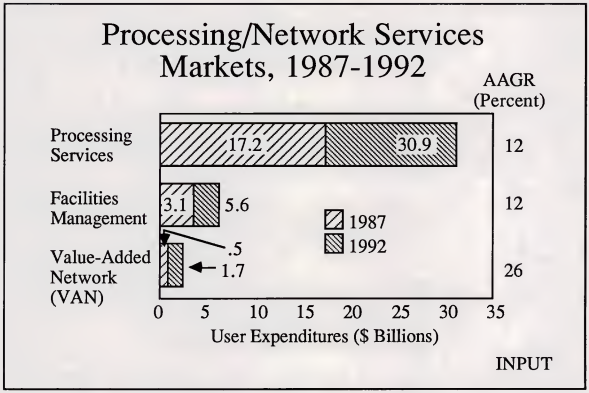

NOTES:

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Electronic Data Interchange

The Computer-to-Computer Exchange of Intercompany Business Documents and Information

- Overcomes Incompatabilities
  - Standard Formats

INPUT

NOTES:

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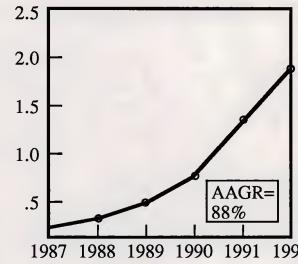
EDI Market Forecast*



1986 Market:
$46 Million

*Network/Processing Services, Software, Professional Services

INPUT

NOTES:

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EDI/Application Integration

- Affects Many Departments
- Top Management Needs to Set Corporate Goals
- Task Force Approach Required

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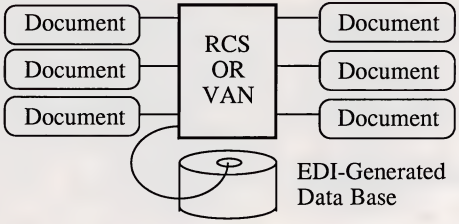
EDI Traffic Becomes a Data Base



INPUT

NOTES:

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EDI/Application Integration

- Professional Services Firms Can Assist
- EDI a Starting Point for Total Operational Improvements

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NOTES:

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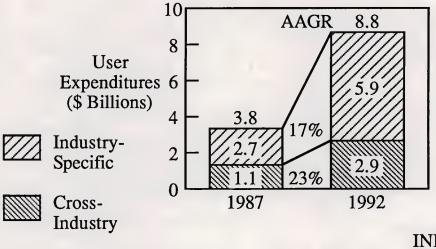
On-line Data Base Market Size 1987-1992



INPUT

NOTES:

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On-line Data Base Industry Summary Status-1987

- Two Million Customers
- 3,350 Data Bases
- Two Billion Records
- 1,500 Publishers
- 500 On-line Vendors

INPUT

NOTES:

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Full Range of Services

Electronic
Information Services

- On-line Data Bases
- Bulletin Boards
- Optical Media
- VANs
- Videotex

INPUT

NOTES:

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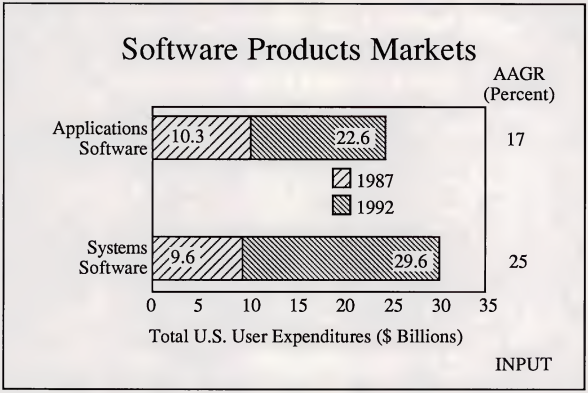

NOTES:

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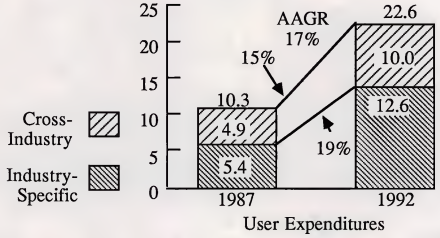
Industry-Specific Applications Software to Increase Significantly

($Billions)



INPUT

NOTES:

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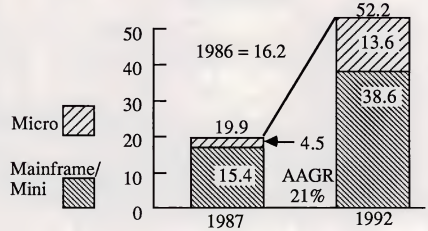
Software Products Market Forecast, Mainframe/Mini and Micro: 1987-1992

($ Billions)



INPUT

NOTES:

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Software Products
Largest Vendors - 1986

	($ Millions)
IBM	2,900
DEC	618
HP	225

INPUT

NOTES:

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Software Products
Largest Vendors - 1986
(Non-Manufacturers)

	($ Millions)
Lotus	218
Computer Associates	159
Ashton-Tate	158
Microsoft	151
Management Science	145

Note: CAI plus UCCEL was #1 with $272 million

INPUT

NOTES:

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Software Products
Hot Areas

- CASE
- Electronic Publishing
- Executive Information Systems (EIS)
- Data Center Management Tools
- Data Base Management Systems

INPUT

NOTES:

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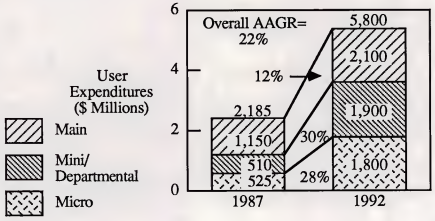
Forecast for Data Base Management Systems: 1987-1992



INPUT

NOTES:

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DBMS Futures

- Distributed/Networked/Interconnected
  Dictionary Integrity, Data Integrity, Performance, Reliability, Platforms Supported (Transparency)
- Relational+ Functionality

INPUT

NOTES:

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DBMS Futures

- High Performance
- Standards Support
- Portability
- Open Architecture

INPUT

NOTES:

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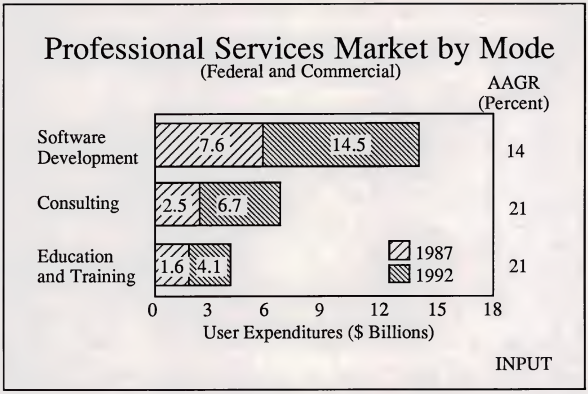

NOTES:

USM1-DT1-35

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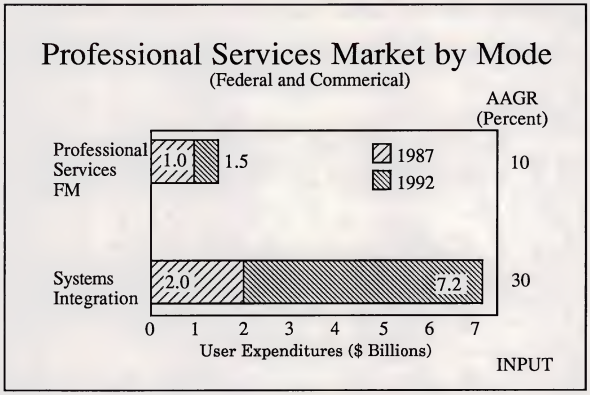

NOTES:

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Professional Services
Largest Vendors - 1986

	Revenue ($ Millions)
IBM	1,495
CSC	614
Arthur Andersen	400
BDM Intl	322
Planning Research	255

INPUT

NOTES:

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Systems Integration

"The Provision of a Total Solution
to a Multidisciplinary Information
Systems Requirement"

INPUT

NOTES:

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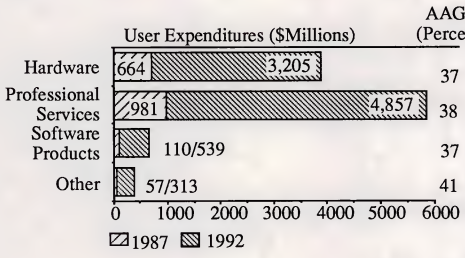
Commercial Systems Integration Markets



INPUT

NOTES:

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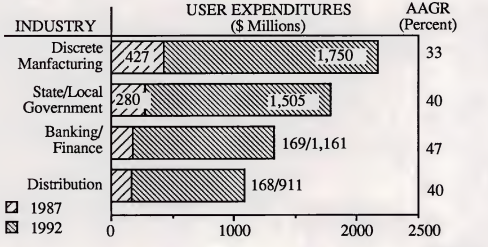
CSI Expenditures by Industry Sector
1987 - 1992



NOTES:

USM1-DT1-40

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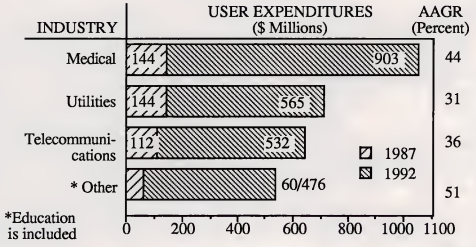
CSI Expenditures by Industry Sector 1987 - 1992



INPUT

NOTES:

USM1-DT1-40a

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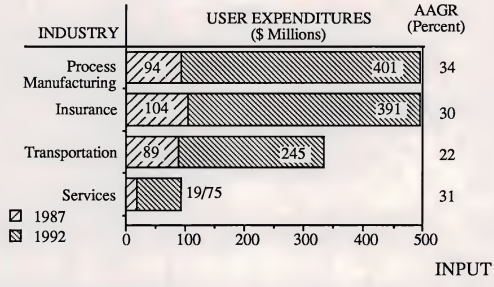
CSI Expenditures by Industry Sector
1987 - 1992



NOTES:

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Forces in Selecting a CSI Approach

- Expertise Is Limited or Experiences Negative
- Single-Source Solution Is Preferred
- Vendor "Partners" Are Desired
- Solution Is Not Pre-Conceived
- Consultant Recommends It

INPUT

NOTES:

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CSI Vendor Selection Criteria

FACTOR	WEIGHT (Percent)
Technical Credibility of the Solution	40
Risk Avoidance	
- Experience/Capabilities	30
- Project Management Approach	10
Cost	20
Service Orientation	Not Scored

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CASE STUDY #2:

GPU
GENERAL PUBLIC
UTILITIES

INPUT

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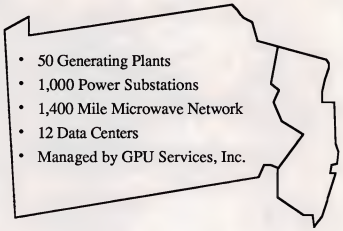
Current Energy Management System



- 50 Generating Plants
- 1,000 Power Substations
- 1,400 Mile Microwave Network
- 12 Data Centers
- Managed by GPU Services, Inc.

INPUT

NOTES:

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Problem

- Obsolete EMS
  - Vendor (Xerox) Out of Business
  - Time and Space Restrictions
  - Difficult to Maintain
- Heavily Patched General Purpose Applications

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NOTES:

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Scope of Work

- Manage Entire Project
- Replace Current Hardware
- Consolidate to Four Sites
- Rewrite EMS

INPUT

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Scope of Work

- Develop Portable Applications Software
- Increase Inter-Processor Communications
- Five-Year Maintenance

INPUT

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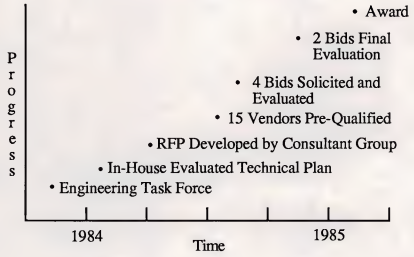
Steps to Award



INPUT

NOTES:

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Evaluation Criteria

- Expertise in EMS
- Revenue Size in Proportion to Project Size
- General Processor Capabilities

INPUT

NOTES:

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Evaluation Criteria

- Ability to Develop Business Applications
- Size of Processor
- System Back-Up Plan

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NOTES:

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AWARD

CONTROL DATA

Energy Management Systems Division

- $32 Million Over Five Years
- Five One-Year Maintenance Contracts

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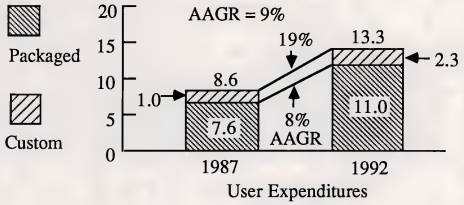
Custom Vs. Packaged Turnkey Systems Market, 1987-1992

($ Billions)



INPUT

NOTES:

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Turnkey Systems: Driving Forces

- Saturation Phase
  - Tough Market
  - Cost of Customization
  - Growth Slowing
- Hardware Vendors Providing Solutions

INPUT

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Turnkey Systems: Driving Forces

- Customizing Potential
- Hardware Profit Contribution Decreasing
- Hardware Vendors Competing on Hardware Portion

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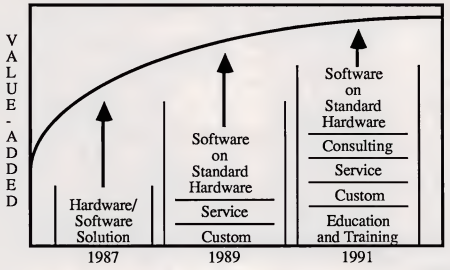
Value-Added Services in the Future



NOTES:

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Special Turnkey Systems Vendors

Company	Characteristic	1986 Revenue ($Millions)
IBM	Solution Pacs	NM
DEC	Systems Solutions	NM
Intergraph	Largest Turnkey Vendor Goes Proprietary	400

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SUMMARY COMMENTS AND CONCLUSIONS

INPUT

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Key Questions

- Processing Services
  – IS Outside Sourcing Increasing?
- Software Products
  – How Much Do You Customize?

INPUT

NOTES:

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Key Questions

- Professional Services
  – Are Core Products Necessary?
- Turnkey Systems
  – Continue to Sell Hardware?

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Macro Issues
Information Services

- Focusing on End-User Needs (Vertical)
- Complexity Begets Customization
- Implementation Skill Mix Shortfall Begets Professional Services Boom

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Macro Issues
Information Services

- Competitive Advantage Fuels Systems Integration
- Alliance Selection and Formation

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Information Services Appeal

- Leverages Core Businesses, Financial Assets
- Large, High-Growth Opportunities
- Potential for Significant Market Share
- Enhance Company Valuation
- Accelerate Technology Assimilation

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Impact on Company

- Potential Large Losses
- Organizational Upheavals
- Phases Honeymoon
  ↓
  Disappointment
  ↓
  Resurgence
- Can Evolve to Major Business Segment

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Conclusions

- Information Services Outlook Bullish
- Technology Provides New Opportunities

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NOTES:

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Information Systems Recomended Changes of Emphasis

1987 - 1992	
Data Processing	→ Information Flow
Information Quantity	→ Information Quality
Automation of Process	→ Improvement of Process

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